

# **CalPERS' Actuarial and Retirement Benefits Seminar**

■ Rate Volatility

■ Rate Stabilization

■ Preview 2006-07 Rates

■ Pooling

■ GASB 45

# **Preview**

# **2006-07**

# **June 30, 2004 Valuation for 2006-07 Incorporates Two Main Changes Compared to Prior Year:**

- 16.7% Market Earnings for 2003-04**
- Implementation of New Rate Stabilization Policy**
- Pooled Plans, First Year of Five Component Cost**

# **Effect of 16.7% Market Earnings**

- Reduces Ratio of Actuarial Value to Market Value from 110% Down to 102%
- Virtually No Change in Contribution Rate
- “Stops the Bleeding”

| market earnings fy e valuation date  |          |                  | 17%               |                  |       |
|--|----------|------------------|-------------------|------------------|-------|
| valuation date / rate year   |          |                  | 6/30/2004 2006-07 |                  |       |
|  |          |                  | \$ 000's          |                  |       |
|  | market   | new<br>actuarial | ratio             | old<br>actuarial | ratio |
| beginning of year  | \$ 2,191 | \$ 2,414         | 110%              | \$ 2,398         | 109%  |
| end of year<br>expected values   | \$ 2,366 | \$ 2,607         |                   | \$ 2,590         |       |
| actual end of year market value  | \$ 2,563 |                  |                   |                  |       |
| difference between<br>market and expected actuarial  |          | \$ (44)          |                   | \$ (27)          |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ (3)           |                   | \$ (9)           |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 2,604         | 102%              | \$ 2,581         | 101%  |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 2,604         | 102%              | \$ 2,581         | 101%  |
| gain or (loss) = actual - expected   | \$ 197   | \$ (3)           |                   | \$ (9)           |       |
| portion of market gain<br>unrecognized   |          | \$ 200           |                   | \$ 206           |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (20)  | \$ 0             |                   | \$ 1             |       |
| payroll = 3% increase each year  | \$ 543   | \$ 543           |                   | \$ 543           |       |
| (gain) or loss %<br>= amortization / payroll   | -4%      | 0%               |                   | 0%               |       |

| market earnings fy e valuation date  |                   |                  | 17%   |                  |       |
|--|-------------------|------------------|-------|------------------|-------|
| valuation date / rate year   | 6/30/2004 2006-07 |                  |       |                  |       |
|  | \$ 000's          |                  |       |                  |       |
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| difference between<br>market and expected actuarial  |                   | \$ (44)          |       | \$ (27)          |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |                   | \$ (3)           |       | \$ (9)           |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |                   | \$ 2,604         | 102%  | \$ 2,581         | 101%  |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |                   | \$ 2,604         | 102%  | \$ 2,581         | 101%  |
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|  |          |                  | \$ 000's          |                  |       |
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| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 2,604         | 102%              | \$ 2,581         | 101%  |
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|  |          |                  | \$ 000's          |                  |       |
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| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ (3)           |                   | \$ (9)           |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 2,604         | 102%              | \$ 2,581         | 101%  |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 2,604         | 102%              | \$ 2,581         | 101%  |
| gain or (loss) = actual - expected   | \$ 197   | \$ (3)           |                   | \$ (9)           |       |
| portion of market gain<br>unrecognized   |          | \$ 200           |                   | \$ 206           |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (20)  | \$ 0             |                   | \$ 1             |       |
| payroll = 3% increase each year  | \$ 543   | \$ 543           |                   | \$ 543           |       |
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| market earnings fy e valuation date  |          |                  | 17%               |                  |       |
|--|----------|------------------|-------------------|------------------|-------|
| valuation date / rate year   |          |                  | 6/30/2004 2006-07 |                  |       |
|  |          |                  | \$ 000's          |                  |       |
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| difference between<br>market and expected actuarial  |          | \$ (44)          |                   | \$ (27)          |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ (3)           |                   | \$ (9)           |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 2,604         | 102%              | \$ 2,581         | 101%  |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 2,604         | 102%              | \$ 2,581         | 101%  |
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| (gain) or loss %<br>= amortization / payroll   | -4%      | 0%               |                   | 0%               |       |

# **Impact on 2006-07 Rates from Change to New Rate Stabilization Policy**

- **New Asset Smoothing Method**
  - Little Impact Since Ratio of Actuarial to Market is Approximately 100% Under Both Smoothing Methods

| market earnings fy e valuation date  |          |                  | 17%               |                  |       |
|--|----------|------------------|-------------------|------------------|-------|
| valuation date / rate year   |          |                  | 6/30/2004 2006-07 |                  |       |
|  |          |                  | \$ 000's          |                  |       |
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| difference between<br>market and expected actuarial  |          | \$ (44)          |                   | \$ (27)          |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ (3)           |                   | \$ (9)           |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 2,604         | 102%              | \$ 2,581         | 101%  |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 2,604         | 102%              | \$ 2,581         | 101%  |
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| portion of market gain<br>unrecognized   |          | \$ 200           |                   | \$ 206           |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (20)  | \$ 0             |                   | \$ 1             |       |
| payroll = 3% increase each year  | \$ 543   | \$ 543           |                   | \$ 543           |       |
| (gain) or loss %<br>= amortization / payroll   | -4%      | 0%               |                   | 0%               |       |

# **Impact on 2006-07 Rates from Change to New Rate Stabilization Policy**

- Minimum Contribution
  - Very Few Plans, Small Change in Contribution Rate

■ “Reamortization” of Gain(Loss) and Fresh Start Bases from 10% to 6% “Payment,” Non-Pooled Plans

- Possible Significant Reduction in Amortization Payments Depending on Existing Amortization Schedule

**Example 2005-06**  
**contribution under OLD**  
**amortization policy**

| description  | period | 6/30/2003       | 6/30/2004       | 6/30/2005       | pmt          | %             |
|--------------|--------|-----------------|-----------------|-----------------|--------------|---------------|
| fresh start  | 20     | \$ 200          | \$ 216          | \$ 232          | \$ 18        | 1.623%        |
| (gain)loss   | 10%    | \$ 300          | \$ 323          | \$ 348          | \$ 35        | 3.164%        |
| amendment    | 20     | <u>\$ 500</u>   | <u>\$ 539</u>   | <u>\$ 581</u>   | <u>\$ 45</u> | <u>4.057%</u> |
| <b>total</b> |        | <b>\$ 1,000</b> | <b>\$ 1,078</b> | <b>\$ 1,161</b> | <b>\$ 97</b> | <b>8.844%</b> |

\* contributions on the unfunded are based on rates in effect for prior years, omitted here for simplicity. Balances are carried forward with 7.75% interest

**Example 2005-06**  
**contribution under NEW**  
**amortization policy**

| description  | period | 6/30/2003       | 6/30/2004       | 6/30/2005       | pmt          | %             |
|--------------|--------|-----------------|-----------------|-----------------|--------------|---------------|
| fresh start  | 30     | \$ 200          | \$ 216          | \$ 232          | \$ 15        | 1.318%        |
| (gain)loss   | 30     | \$ 300          | \$ 323          | \$ 348          | \$ 22        | 1.978%        |
| amendment    | 20     | <u>\$ 500</u>   | <u>\$ 539</u>   | <u>\$ 581</u>   | <u>\$ 45</u> | <u>4.057%</u> |
| <b>total</b> |        | <b>\$ 1,000</b> | <b>\$ 1,078</b> | <b>\$ 1,161</b> | <b>\$ 81</b> | <b>7.353%</b> |

**What about the Effect of the  
Recently Announced 12%  
Market Return for 2004-05 on  
the 2007-08 Contribution Rate?**

| market earnings fy e valuation date  |          |                  | 12%               |                  |       |
|--|----------|------------------|-------------------|------------------|-------|
| valuation date / rate year   |          |                  | 6/30/2005 2007-08 |                  |       |
|  |          |                  | \$ 000's          |                  |       |
|  | market   | new<br>actuarial | ratio             | old<br>actuarial | ratio |
| beginning of year  | \$ 2,563 | \$ 2,604         | 102%              | \$ 2,581         | 101%  |
| end of year<br>expected values   | \$ 2,768 | \$ 2,812         |                   | \$ 2,788         |       |
| actual end of year market value  | \$ 2,871 |                  |                   |                  |       |
| difference between<br>market and expected actuarial  |          | \$ 59            |                   | \$ 83            |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ 4             |                   | \$ 28            |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 2,816         | 98%               | \$ 2,815         | 98%   |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 2,816         | 98%               | \$ 2,815         | 98%   |
| gain or (loss) = actual - expected   | \$ 103   | \$ 4             |                   | \$ 28            |       |
| portion of market gain<br>unrecognized   |          | \$ 99            |                   | \$ 75            |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (10)  | \$ (0)           |                   | \$ (3)           |       |
| payroll = 3% increase each year  | \$ 559   | \$ 559           |                   | \$ 559           |       |
| (gain) or loss %<br>= amortization / payroll   | -2%      | 0%               |                   | 0%               |       |

| market earnings fy e valuation date  |          |                   | 12%   |                  |       |
|--|----------|-------------------|-------|------------------|-------|
| valuation date / rate year   |          | 6/30/2005 2007-08 |       |                  |       |
|  |          | \$ 000's          |       |                  |       |
|  | market   | new<br>actuarial  | ratio | old<br>actuarial | ratio |
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| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ 4              |       | \$ 28            |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 2,816          | 98%   | \$ 2,815         | 98%   |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 2,816          | 98%   | \$ 2,815         | 98%   |
| gain or (loss) = actual - expected   | \$ 103   | \$ 4              |       | \$ 28            |       |
| portion of market gain<br>unrecognized   |          | \$ 99             |       | \$ 75            |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (10)  | \$ (0)            |       | \$ (3)           |       |
| payroll = 3% increase each year  | \$ 559   | \$ 559            |       | \$ 559           |       |
| (gain) or loss %<br>= amortization / payroll   | -2%      | 0%                |       | 0%               |       |

| market earnings fy e valuation date  |          |                  | 12%               |                  |       |
|--|----------|------------------|-------------------|------------------|-------|
| valuation date / rate year   |          |                  | 6/30/2005 2007-08 |                  |       |
|  |          |                  | \$ 000's          |                  |       |
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| beginning of year  | \$ 2,563 | \$ 2,604         | 102%              | \$ 2,581         | 101%  |
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| difference between<br>market and expected actuarial  |          | \$ 59            |                   | \$ 83            |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ 4             |                   | \$ 28            |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 2,816         | 98%               | \$ 2,815         | 98%   |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 2,816         | 98%               | \$ 2,815         | 98%   |
| gain or (loss) = actual - expected   | \$ 103   | \$ 4             |                   | \$ 28            |       |
| portion of market gain<br>unrecognized   |          | \$ 99            |                   | \$ 75            |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (10)  | \$ (0)           |                   | \$ (3)           |       |
| payroll = 3% increase each year  | \$ 559   | \$ 559           |                   | \$ 559           |       |
| (gain) or loss %<br>= amortization / payroll   | -2%      | 0%               |                   | 0%               |       |

| market earnings fy e valuation date  |          |                  | 12%               |                  |       |
|--|----------|------------------|-------------------|------------------|-------|
| valuation date / rate year   |          |                  | 6/30/2005 2007-08 |                  |       |
|  |          |                  | \$ 000's          |                  |       |
|  | market   | new<br>actuarial | ratio             | old<br>actuarial | ratio |
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| difference between<br>market and expected actuarial  |          | \$ 59            |                   | \$ 83            |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ 4             |                   | \$ 28            |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | <u>\$ 2,816</u>  | 98%               | <u>\$ 2,815</u>  | 98%   |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | <u>\$ 2,816</u>  | 98%               | <u>\$ 2,815</u>  | 98%   |
| gain or (loss) = actual - expected   | \$ 103   | \$ 4             |                   | \$ 28            |       |
| portion of market gain<br>unrecognized   |          | \$ 99            |                   | \$ 75            |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (10)  | \$ (0)           |                   | \$ (3)           |       |
| payroll = 3% increase each year  | \$ 559   | \$ 559           |                   | \$ 559           |       |
| (gain) or loss %<br>= amortization / payroll   | -2%      | 0%               |                   | 0%               |       |

# **End Preview 2006-07**

# **APPENDIX**

## **SLIDES FOR ALL 11 YEARS OF EXAMPLE**

|  |          |                  |           |                  |       |
|--|----------|------------------|-----------|------------------|-------|
| market earnings fy e valuation date  |          |                  | 16%       |                  |       |
| valuation date / rate year   |          |                  | 6/30/1995 | 1997-98          |       |
|  |          |                  | \$ 000's  |                  |       |
|  | market   | new<br>actuarial | ratio     | old<br>actuarial | ratio |
| beginning of year  | \$ 1,000 | \$ 1,000         | 100%      | \$ 1,000         | 100%  |
| end of year<br>expected values   | \$ 1,080 | \$ 1,080         |           | \$ 1,080         |       |
| actual end of year market value  | \$ 1,160 |                  |           |                  |       |
| difference between<br>market and expected actuarial  |          | \$ 80            |           | \$ 80            |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ 5             |           | \$ 27            |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 1,085         | 94%       | \$ 1,107         | 95%   |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 1,085         | 94%       | \$ 1,107         | 95%   |
| gain or (loss) = actual - expected   | \$ 80    | \$ 5             |           | \$ 27            |       |
| portion of market gain<br>unrecognized   |          | \$ 75            |           | \$ 53            |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (8)   | \$ (0)           |           | \$ (3)           |       |
| payroll = 3% increase each year  | \$ 416   | \$ 416           |           | \$ 416           |       |
| (gain) or loss %<br>= amortization / payroll   | -2%      | 0%               |           | -0.6%            |       |
| actual earnings rate =<br>end of year / beg of year - 1  | 16%      | 9%               |           | 11%              |       |

|  |          |                  |           |                  |       |
|--|----------|------------------|-----------|------------------|-------|
| market earnings fy e valuation date  |          |                  | 15%       |                  |       |
| valuation date / rate year   |          |                  | 6/30/1996 | 1998-99          |       |
|  |          |                  | \$ 000's  |                  |       |
|  | market   | new<br>actuarial | ratio     | old<br>actuarial | ratio |
| beginning of year  | \$ 1,160 | \$ 1,085         | 94%       | \$ 1,107         | 95%   |
| end of year<br>expected values   | \$ 1,253 | \$ 1,172         |           | \$ 1,195         |       |
| actual end of year market value  | \$ 1,334 |                  |           |                  |       |
| difference between<br>market and expected actuarial  |          | \$ 162           |           | \$ 139           |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ 11            |           | \$ 46            |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 1,183         | 89%       | \$ 1,241         | 93%   |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 1,183         | 89%       | \$ 1,241         | 93%   |
| gain or (loss) = actual - expected   | \$ 81    | \$ 11            |           | \$ 46            |       |
| portion of market gain<br>unrecognized   |          | \$ 70            |           | \$ 35            |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (8)   | \$ (1)           |           | \$ (5)           |       |
| payroll = 3% increase each year  | \$ 428   | \$ 428           |           | \$ 428           |       |
| (gain) or loss %<br>= amortization / payroll   | -1.9%    | -0.2%            |           | -1.1%            |       |
| actual earnings rate =<br>end of year / beg of year - 1  | 15%      | 9%               |           | 12%              |       |

|  |          |                  |                   |                  |       |
|--|----------|------------------|-------------------|------------------|-------|
| market earnings fy e valuation date  |          |                  | 20%               |                  |       |
| valuation date / rate year   |          |                  | 6/30/1997 1999-00 |                  |       |
|  |          |                  | \$ 000's          |                  |       |
|  | market   | new<br>actuarial | ratio             | old<br>actuarial | ratio |
| beginning of year  | \$ 1,334 | \$ 1,183         | 89%               | \$ 1,241         | 93%   |
| end of year<br>expected values   | \$ 1,441 | \$ 1,278         |                   | \$ 1,341         |       |
| actual end of year market value  | \$ 1,601 |                  |                   |                  |       |
| difference between<br>market and expected actuarial  |          | \$ 323           |                   | \$ 260           |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ 22            |                   | \$ 87            |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 1,299         | 81%               | \$ 1,427         | 89%   |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 1,299         | 81%               | \$ 1,441         | 90%   |
| gain or (loss) = actual - expected   | \$ 160   | \$ 22            |                   | \$ 100           |       |
| portion of market gain<br>unrecognized   |          | \$ 139           |                   | \$ 60            |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (16)  | \$ (1)           |                   | \$ (10)          |       |
| payroll = 3% increase each year  | \$ 441   | \$ 441           |                   | \$ 441           |       |
| (gain) or loss %<br>= amortization / payroll   | -3.6%    | -0.3%            |                   | -2.3%            |       |
| actual earnings rate =<br>end of year / beg of year - 1  | 20%      | 10%              |                   | 16%              |       |

|  |          |                  |           |                  |       |
|--|----------|------------------|-----------|------------------|-------|
| market earnings fy e valuation date  |          |                  | 20%       |                  |       |
| valuation date / rate year   |          |                  | 6/30/1998 | 2000-01          |       |
|  |          |                  | \$ 000's  |                  |       |
|  | market   | new<br>actuarial | ratio     | old<br>actuarial | ratio |
| beginning of year  | \$ 1,601 | \$ 1,299         | 81%       | \$ 1,441         | 90%   |
| end of year<br>expected values   | \$ 1,729 | \$ 1,403         |           | \$ 1,556         |       |
| actual end of year market value  | \$ 1,921 |                  |           |                  |       |
| difference between<br>market and expected actuarial  |          | \$ 518           |           | \$ 365           |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ 35            |           | \$ 122           |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 1,438         | 75%       | \$ 1,678         | 87%   |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 1,537         | 80%       | \$ 1,729         | 90%   |
| gain or (loss) = actual - expected   | \$ 192   | \$ 134           |           | \$ 173           |       |
| portion of market gain<br>unrecognized   |          | \$ 58            |           | \$ 19            |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (19)  | \$ (8)           |           | \$ (17)          |       |
| payroll = 3% increase each year  | \$ 455   | \$ 455           |           | \$ 455           |       |
| (gain) or loss %<br>= amortization / payroll   | -4%      | -2%              |           | -3.8%            |       |
| actual earnings rate =<br>end of year / beg of year - 1  | 20%      | 18%              |           | 20%              |       |

|  |          |                  |           |                  |       |
|--|----------|------------------|-----------|------------------|-------|
| market earnings fy e valuation date  |          |                  | 13%       |                  |       |
| valuation date / rate year   |          |                  | 6/30/1999 | 2001-02          |       |
|  |          |                  | \$ 000's  |                  |       |
|  | market   | new<br>actuarial | ratio     | old<br>actuarial | ratio |
| beginning of year  | \$ 1,921 | \$ 1,537         | 80%       | \$ 1,729         | 90%   |
| end of year<br>expected values   | \$ 2,075 | \$ 1,660         |           | \$ 1,867         |       |
| actual end of year market value  | \$ 2,171 |                  |           |                  |       |
| difference between<br>market and expected actuarial  |          | \$ 511           |           | \$ 304           |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ 34            |           | \$ 101           |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 1,694         | 78%       | \$ 1,968         | 91%   |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 1,737         | 80%       | \$ 1,968         | 91%   |
| gain or (loss) = actual - expected   | \$ 96    | \$ 77            |           | \$ 101           |       |
| portion of market gain<br>unrecognized   |          | \$ 19            |           | \$ (5)           |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (10)  | \$ (5)           |           | \$ (10)          |       |
| payroll = 3% increase each year  | \$ 468   | \$ 468           |           | \$ 468           |       |
| (gain) or loss %<br>= amortization / payroll   | -2.1%    | -1.0%            |           | -2.2%            |       |
| actual earnings rate =<br>end of year / beg of year - 1  | 13%      | 13%              |           | 14%              |       |

|  |          |                  |           |                  |       |
|--|----------|------------------|-----------|------------------|-------|
| market earnings fy e valuation date  |          |                  | 11%       |                  |       |
| valuation date / rate year   |          |                  | 6/30/2000 | 2002-03          |       |
|  |          |                  | \$ 000's  |                  |       |
|  | market   | new<br>actuarial | ratio     | old<br>actuarial | ratio |
| beginning of year  | \$ 2,171 | \$ 1,737         | 80%       | \$ 1,968         | 91%   |
| end of year<br>expected values   | \$ 2,344 | \$ 1,875         |           | \$ 2,126         |       |
| actual end of year market value  | \$ 2,409 |                  |           |                  |       |
| difference between<br>market and expected actuarial  |          | \$ 534           |           | \$ 284           |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ 36            |           | \$ 95            |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 1,911         | 79%       | \$ 2,220         | 92%   |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 1,928         | 80%       | \$ 2,220         | 92%   |
| gain or (loss) = actual - expected   | \$ 65    | \$ 52            |           | \$ 95            |       |
| portion of market gain<br>unrecognized   |          | \$ 13            |           | \$ (29)          |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (7)   | \$ (3)           |           | \$ (9)           |       |
| payroll = 3% increase each year  | \$ 482   | \$ 482           |           | \$ 482           |       |
| (gain) or loss %<br>= amortization / payroll   | -1.4%    | -0.6%            |           | -2.0%            |       |
| actual earnings rate =<br>end of year / beg of year - 1  | 11%      | 11%              |           | 13%              |       |

|  |          |                  |           |                  |       |
|--|----------|------------------|-----------|------------------|-------|
| market earnings fy e valuation date  |          |                  | -7%       |                  |       |
| valuation date / rate year   |          |                  | 6/30/2001 | 2003-04          |       |
|  |          |                  | \$ 000's  |                  |       |
|  | market   | new<br>actuarial | ratio     | old<br>actuarial | ratio |
| beginning of year  | \$ 2,409 | \$ 1,928         | 80%       | \$ 2,220         | 92%   |
| end of year<br>expected values   | \$ 2,602 | \$ 2,082         |           | \$ 2,398         |       |
| actual end of year market value  | \$ 2,241 |                  |           |                  |       |
| difference between<br>market and expected actuarial  |          | \$ 159           |           | \$ (157)         |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ 11            |           | \$ (52)          |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 2,092         | 93%       | \$ 2,346         | 105%  |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 2,092         | 93%       | \$ 2,346         | 105%  |
| gain or (loss) = actual - expected   | \$ (361) | \$ 11            |           | \$ (52)          |       |
| portion of market gain<br>unrecognized   |          | \$ (372)         |           | \$ (309)         |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ 36    | \$ (1)           |           | \$ 5             |       |
| payroll = 3% increase each year  | \$ 497   | \$ 497           |           | \$ 497           |       |
| (gain) or loss %<br>= amortization / payroll   | 7.3%     | -0.1%            |           | 1.1%             |       |
| actual earnings rate =<br>end of year / beg of year - 1  | -7%      | 9%               |           | 6%               |       |

|  |          |                  |           |                  |       |
|--|----------|------------------|-----------|------------------|-------|
| market earnings fy e valuation date  |          |                  | -6%       |                  |       |
| valuation date / rate year   |          |                  | 6/30/2002 | 2004-05          |       |
|  |          |                  | \$ 000's  |                  |       |
|  | market   | new<br>actuarial | ratio     | old<br>actuarial | ratio |
| beginning of year  | \$ 2,241 | \$ 2,092         | 93%       | \$ 2,346         | 105%  |
| end of year<br>expected values   | \$ 2,420 | \$ 2,260         |           | \$ 2,533         |       |
| actual end of year market value  | \$ 2,106 |                  |           |                  |       |
| difference between<br>market and expected actuarial  |          | \$ (153)         |           | \$ (427)         |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ (10)          |           | \$ (142)         |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 2,250         | 107%      | \$ 2,391         | 114%  |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 2,250         | 107%      | \$ 2,317         | 110%  |
| gain or (loss) = actual - expected   | \$ (314) | \$ (10)          |           | \$ (216)         |       |
| portion of market gain<br>unrecognized   |          | \$ (303)         |           | \$ (97)          |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ 31    | \$ 1             |           | \$ 22            |       |
| payroll = 3% increase each year  | \$ 512   | \$ 512           |           | \$ 512           |       |
| (gain) or loss %<br>= amortization / payroll   | 6.1%     | 0.1%             |           | 4.2%             |       |
| actual earnings rate =<br>end of year / beg of year - 1  | -6%      | 8%               |           | -1%              |       |

|  |          |                  |                   |                  |       |
|--|----------|------------------|-------------------|------------------|-------|
| market earnings fy e valuation date  |          |                  | 4%                |                  |       |
| valuation date / rate year   |          |                  | 6/30/2003 2005-06 |                  |       |
|  |          |                  | \$ 000's          |                  |       |
|  | market   | new<br>actuarial | ratio             | old<br>actuarial | ratio |
| beginning of year  | \$ 2,106 | \$ 2,250         | 107%              | \$ 2,317         | 110%  |
| end of year<br>expected values   | \$ 2,275 | \$ 2,430         |                   | \$ 2,502         |       |
| actual end of year market value  | \$ 2,191 |                  |                   |                  |       |
| difference between<br>market and expected actuarial  |          | \$ (239)         |                   | \$ (312)         |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ (16)          |                   | \$ (104)         |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 2,414         | 110%              | \$ 2,398         | 109%  |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 2,414         | 110%              | \$ 2,398         | 109%  |
| gain or (loss) = actual - expected   | \$ (84)  | \$ (16)          |                   | \$ (104)         |       |
| portion of market gain<br>unrecognized   |          | \$ (68)          |                   | \$ 20            |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ 8     | \$ 1             |                   | \$ 10            |       |
| payroll = 3% increase each year  | \$ 527   | \$ 527           |                   | \$ 527           |       |
| (gain) or loss %<br>= amortization / payroll   | 1.6%     | 0.2%             |                   | 2.0%             |       |
| actual earnings rate =<br>end of year / beg of year - 1  | 4%       | 7%               |                   | 4%               |       |

|  |          |                  |           |                  |       |
|--|----------|------------------|-----------|------------------|-------|
| market earnings fy e valuation date  |          |                  | 17%       |                  |       |
| valuation date / rate year   |          |                  | 6/30/2004 | 2006-07          |       |
|  |          |                  | \$ 000's  |                  |       |
|  | market   | new<br>actuarial | ratio     | old<br>actuarial | ratio |
| beginning of year  | \$ 2,191 | \$ 2,414         | 110%      | \$ 2,398         | 109%  |
| end of year<br>expected values   | \$ 2,366 | \$ 2,607         |           | \$ 2,590         |       |
| actual end of year market value  | \$ 2,563 |                  |           |                  |       |
| difference between<br>market and expected actuarial  |          | \$ (44)          |           | \$ (27)          |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ (3)           |           | \$ (9)           |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 2,604         | 102%      | \$ 2,581         | 101%  |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 2,604         | 102%      | \$ 2,581         | 101%  |
| gain or (loss) = actual - expected   | \$ 197   | \$ (3)           |           | \$ (9)           |       |
| portion of market gain<br>unrecognized   |          | \$ 200           |           | \$ 206           |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (20)  | \$ 0             |           | \$ 1             |       |
| payroll = 3% increase each year  | \$ 543   | \$ 543           |           | \$ 543           |       |
| (gain) or loss %<br>= amortization / payroll   | -4%      | 0%               |           | 0%               |       |
| actual earnings rate =<br>end of year / beg of year - 1  | 17%      | 8%               |           | 8%               |       |

|  |          |                  |                   |                  |       |
|--|----------|------------------|-------------------|------------------|-------|
| market earnings fy e valuation date  |          |                  | 12%               |                  |       |
| valuation date / rate year   |          |                  | 6/30/2005 2007-08 |                  |       |
|  |          |                  | \$ 000's          |                  |       |
|  | market   | new<br>actuarial | ratio             | old<br>actuarial | ratio |
| beginning of year  | \$ 2,563 | \$ 2,604         | 102%              | \$ 2,581         | 101%  |
| end of year<br>expected values   | \$ 2,768 | \$ 2,812         |                   | \$ 2,788         |       |
| actual end of year market value  | \$ 2,871 |                  |                   |                  |       |
| difference between<br>market and expected actuarial  |          | \$ 59            |                   | \$ 83            |       |
| adjustment<br>=1/15 of difference for new actuarial, =1/3<br>for old actuarial                           |          | \$ 4             |                   | \$ 28            |       |
| end of year<br>preliminary actuarial value<br>=expected + adjustment                                     |          | \$ 2,816         | 98%               | \$ 2,815         | 98%   |
| end of year<br>actuarial value limited to<br>80%-120% corridor new actuarial, 90%-<br>110% old actuarial |          | \$ 2,816         | 98%               | \$ 2,815         | 98%   |
| gain or (loss) = actual - expected   | \$ 103   | \$ 4             |                   | \$ 28            |       |
| portion of market gain<br>unrecognized   |          | \$ 99            |                   | \$ 75            |       |
| amortization = 6% for (new) actuarial,<br>10% for old actuarial and market                               | \$ (10)  | \$ (0)           |                   | \$ (3)           |       |
| payroll = 3% increase each year  | \$ 559   | \$ 559           |                   | \$ 559           |       |
| (gain) or loss %<br>= amortization / payroll   | -2%      | 0%               |                   | 0%               |       |
| actual earnings rate =<br>end of year / beg of year - 1  | 12%      | 8%               |                   | 9%               |       |